

# Stalker Phodar

Model SE-1-EU

## Accessories

The Stalker Phodar SE-1 can be outfitted as either a permanently mounted unit on a utility pole or overpass, or a tripod-mounted portable configuration. Its IP67 case lets it stand up to any weather in any season. And its modular design lets the operator provision the unit to fit the environment.

### Mounting Brackets

Phodar Bracket: 200-1081-00  
Strobe Bracket: 200-1081-01

This mounting bracket is especially designed to mount the Phodar or Strobe Illuminator to a utility pole or street light standard. It can also be used to attach either unit to a horizontal structure such as an overpass with slight user modification.

### Strobe Illuminator

200-1035-00

The Strobe Illuminator is used in environments where supplemental lighting is needed. The Xenon strobe light is rated at 100,000 shots.

### Rugged Tripod

015-0611-00

This heavy duty tripod easily supports the weight of the Phodar. Besides providing a stable platform, it folds down to 18cm in length.

### Tripod Mount

015-0612-00

This is mount is required to attach the Phodar to the Rugged Tripod.

### Touchscreen Control

015-0614-00

The touchscreen is used to program the Phodar in the field. It displays the Phodar's configuration screens and accepts touch input.

### AC Adapter

155-2443-00

This AC Adapter is useful when the Phodar is permanently installed.

### USB External ANPR

015-0619-50

Plugging into one the Phodar's three USB ports, External ANPR assists the Phodar's main evidence application in identifying the target vehicle's number plate for use in the Evidence Browser.



## Automated and reliable photo/video traffic violation enforcement for collection and ticketing



- Easy, wizard-guided setup
- Monitor up to 32 vehicles traveling in both directions on a multi-lane roadway
- Meets or exceeds all current market requirements in the European Union
- Produces high-quality Smart Evidence photos and video, including vehicle indication, number plate, driver facial characteristics, and road plan
- Manage using external touch screen monitor or thru a TCP/IP remote connection

*A sophisticated, compact 3D tracking radar, high-resolution camera, video analytics, and a powerful embedded processor for automated traffic enforcement and ticketing.*



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**STALKER** Intelligent Technologies



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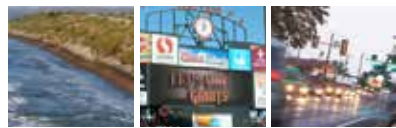
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# Automatic monitoring of up to 32 vehicles across 4 lanes of traffic

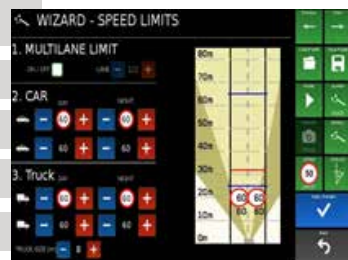
The Stalker Phodar SE-1 is designed for traffic surveillance and violation evidence collection using the newest 3-Dimension tracking type Doppler radar, video analytics, and high-resolution cameras. The combination of these elements enables monitoring of up to 32 vehicles traveling in both directions on a multi-lane roadway.

The Stalker Phodar controlling software produces a series of high-quality Smart Evidence Photos, including all necessary information about the violation. The Smart Evidence file can be used by back office software for automatic ticketing systems.

## Features

- Protection class IP67
- Mass Storage SSD 128GB-500GB
- Communication 1Gb Ethernet, TCP/IP, 3xUSB, 4xI/O
- Resolution 5 MPixel (2448 x 2050)
- Accuracy +/- 3km/h to 100km/h +/- 3% above 100km/h
- Tracking speed of up to 32 objects
- Pre and Post Recording
- Built-in GPS

## Intuitive Setup Wizard



The Stalker Phodar's setup wizard guides the user through a step-by-step process for configuring the device. Since the device can be mobile, custom parameters can be stored and retrieved whenever device is rebooted, the settings remain unchanged.

During setup, the operator is guided by the Wizard through all device settings necessary to set or adjust before beginning evidence collection.

## Local or remote operation

Locally, the system is controlled with a Graphical User Interface which gives access to all features including browsing of collected evidence, export to external device, calibration and setup, log check, statistics, and live work preview.

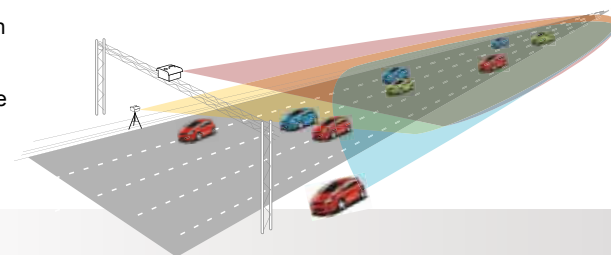
When permanently mounted, the system can be controlled over a TCP/IP Remote connection. Using TCP/IP access, it is possible to control multiple devices at one control center.

Advanced encryption and data protection algorithms secure data from manipulation and ensure successful certification in any country.

## Flexible Monitoring Options

The Stalker Phodar monitors traffic three ways.

- Side of the roadside. Usually tripod- or utility-pole-mounted.
- Over the road. Center of the roadway with gantry or bridge mounting.
- Mobile vehicle. Parked vehicle on the side of the roadway.



Heavy-duty, adjustable mount

Versatile tripod mounting



## Software Features

Statistics	Vehicle lane identification, speed and distance tracking.
Remote Admin	Available through RemoteDesktop as well as HTTPS by any Browser.
Auto Evidence Export.	Automatic evidence export to USB and/or remote server.
Auto Calibration	Automatic Angle Calibration.

## Other

Accessories	Pole mounting brackets, heavy duty tripod, lens filters, AC adapter, 12V Battery, IR illuminator, strobe illuminator, LCD monitor with touchscreen.
Modules	WiFi, built-in GPS, GSM, additional camera, shock sensor, angle calculator.
Upgrades	Red light, ANPR module.

## Strobe Specifications

### Optical

Guide number (meters, 100ISO)	60	(1)
Maximum distance, 400ISO, f2.8	42m	(1)
Vertical beam spread	12°	
Horizontal beam spread	20°	
Strobe duration	<300 μs	(2)

### Electrical

Electrical supply	12VDC (10.8 - 15 VDC)	
Rated energy per shot	60J	(3)
Stored energy	475 J	
Emission peak power	350 kW	
Peak supply current	4A@12V	
Stand-by consumption	2.5W	
Built-in fuse	5A (Time-lag T)	
Lifespan of the lamp	100 000 shots	(2) (4)
Lifespan of electronics (except the lamp) MTBF	50,000 hours, or 3,000,000 shots	

### Dynamic

Minimum interval between 2 shots	0.02 s	
Guaranteed number of shots in a 50 Hz burst	3 shots	(2)
Guaranteed number of shots in a 5 Hz burst	4 shots	(2)
Guaranteed number of shots in a 1 Hz burst	6 shots	(2)
Maximum repetition rate, 24/24h	0.33 Hz	(2)

### Physical

Size	18.4 cm (h) x 22.9 cm (w) x 33.7 cm (d)
Weight, ready for use, with metal case	5 kg
Working ambient temperature	-20°...+60°C
Index protection	IP67



### Notes:

(1) given at rated energy, and for pictures of vehicles, slightly under exposes in order to reduce the adverse effect of highlights like reflections on shiny parts.

(2) given at rated energy.

(3) the "rated energy" is a value for which the device is optimized. However, thanks to the technology implemented here, which interrupts the ongoing strobe much before the full discharge of the storage capacitors, other amounts of energy per shot are possible. With the same set of components, and another adjustment, the devices can output three times their nominal energy, as well as weak shots.

(4) given at 30% loss of light emission.



## Phodar Specifications

### Set

Architecture	Modular
Protection Class	IP 67
Operating temperature	-30°C to +60°C
Power Consumption	<3.2A 12VDC
Power Supply	10.8 – 15VDC optional 230VAC
Dimensions	18.4 cm (h) x 22.9 cm (w) x 33.7 cm (d)
Weight	6.0 Kg

### Processing Unit

Operating system	Embedded OS (Linux)
Processor	Industrial 1 GHz AMD G-Series Fusion Dual-Core 64-bit x 86 CPU
Memory	4GB
Storage	128 – 256 GB Internal SSD
Communication	3xUSB, CAN, I/O, GbE, Optional WiFi, GSM

### Internal Camera

Resolution	5 MPixel (2448 x 2050)
FPS	up to 15fps
Sensor	2/3" CCD Color / B&W
IR-Cut Filter	Color sensor, Yes / black & white sensor, No.
Lens	Megapixel 25 m, 35mm, 50mm, 75mm

### Internal Radar

Maximum Range (Truck)	typically 240m
Maximum Range (Car)	typically 160m
Max. Range (Pedestrian)	typically 60m
Azimuth	3dB Limits ±6 degree
Elevation	3dB Limits ±4 degree
Max. Az. Field of View	±18 degree
Measurement Speed	2 km/h – 299 km/h Either or both directions
Accuracy in operating conditions	< ± 3km/h to 100 km/h < ± 3% above 100km/h
Accuracy in laboratory conditions	< ± 1km/h to 100 km/h < ± 1% above 100km/h
Accuracy of distance measurement	< 2.5% (10m .. max range)
Tracking objects	up to 32 objects simultaneously
Operating frequency	24 GHz, K Band

### Software

Remote Administration	Yes
Evidence Recording	Automatic
Pre-Recording	Yes
Post-Recording	Yes
Encryption	Yes



22.9 cm



18.4 cm

33.7 cm

## Evidence Review and Ticketing

The SE-1 is ideally suited as the evidence collection module of a turnkey enforcement solution, including ANPR, and ticketing and collection applications. A variety of video formats and communications protocols ensure compatibility with numerous back-end systems. In some cases, a customer's end-to-end project can be achieved through careful consultations and planning. Given the right supporting infrastructure, the SE-1 can be expanded for red light enforcement and secondary violation capture such as cell phone usage or seat belt compliance.

The Stalker Phodar stores violation records internally. Violation records can be reviewed and selected for copying through its USB port. Additionally, violation records can also be archived to USB or to FTP.

Each violation record contains a synopsis the data pertinent to an individual violation. Each violation records includes:

- Date and time of the violation
- Evidence Number
- Vehicle ID
- Number of photos
- Speed limit at location
- Direction of the vehicle shown as arrow
- Maximum speed of the vehicle in Measurement Zone
- Difference between Limit and Captured Speed.
- Copy Status
- Status
- Cropped Vehicle and cropped number plate (if ANPR is enabled)



## Smart Evidence Photo generated for printing and ticketing



More violation details are available by opening a detailed Evidence Window. Video evidence can be reviewed frame by frame. The violator is easily identified with a special orange box overlaid in the video. A Road Plan view is rendered showing the Phodar settings at the time of the infraction. The Evidence Window contains basic violation information, and a Smart Evidence Photo can be generated for printing and ticketing.

The Evidence Window includes:

- Progress bar showing number of Photos in the evidence;
- Current photo
- ID: The Violator vehicle ID
- EVID: unique for the device Evidence ID
- Y: Distance from the Radar in meters
- Lane: Lane number
- Orange Speed: The current Speed on selected image
- Red MAX Speed: Maximum speed on the violator in region of measurement
- NP: ANPR Visualization

## Automatic Number Plate Recognition - ANPR

By licensing through a 3rd party software provider, the Phodar SE-1 has the option of processing the ANPR internally, externally using a USB dongle, or built into the back office software. Each option embeds the ANPR metadata into the evidence files.



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# Powerful Evidence Browser

The Phodar Evidence Browser software imports and processes encrypted evidence records collected by the Stalker Phodar.

Imported evidence records may be stored in a database. Generation of AVI, JPEG, or Word DOCX files make it easy to distribute collected evidence records to both the violators and courts.

### Main software features:

- Stores evidence records in a database list
- Facilitates Automatic Number Plate Recognition
- Filters list by date, speed, limits, number plate, violator data, and more
- Exports evidence records with additional data for archiving
- Generates AVI, single JPG, and DOCX based on custom templates
- Tracks evidence status (new, open, processing, closed, successfull)
- Allows the addition of basic violator data to evidence like name, address, fine, penalty points, etc.
- Adjust brightness, contrast, special histogram on cropped vehicle, driver and number plate images
- Browse evidence frame by frame and play movie directly from encrypted file
- Optional Automatic Import of new violations by FTP



In this sequence, sophisticated tracking algorithms follow a speeding motorcycle changing lanes along a narrow, crowded highway